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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,766	07/28/2003	Ji-Rong Wen	MS1-1616US	5788
22801 7590 12/11/2007 LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			EXAMINER VAUGHN, GREGORY J	
			ART UNIT 2178	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/628,766

Applicant(s)

WEN ET AL.

Examiner

Gregory J. Vaughn

Art Unit

2178

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7-9,11-14,16,17,20-33,35,68-71 and 73-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7-9,11-14,16,17,20-33,35,68-71 and 73-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/14/2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Application Background

1. This action is responsive to the amendment filed on 9/24/2007.
2. Applicant has cancelled claims 2, 6, 10, 18 and 19, amended claims 1, 14, 16, 17, 20, 31, 33, 68, 71 and 74, and added new claims 76-80. Claims 15, 34, 36-67 and 72 were previously canceled.
3. Claims 1, 3-5, 7-9, 11-14, 16, 17, 20-33, 35, 68-71 and 73-80 are pending in the case, claims 1, 31, 68 and 74 are independent claims.
4. Acknowledgement is made to the applicant's submission of an Information Disclosure Statement filed 11/14/2007. The foreign patent document listed therein has not been considered because the foreign patent document is written in a language other than English, and applicant has failed to provide a concise explanation of the relevance, as it is presently understood by applicant, or a written translation. See MPEP 609 and 37 CFR 1.98.
5. The examiner's rejection of claims 2, 6, 10, 18 and 19, made under 35 USC 102, as described in the *Claims Rejections – 35 USC 102* section of the previous office action (dated 3/22/2007) is withdrawn in view of the canceled claims.
6. The examiner's rejection of claims 1, 3-5, 7-9, 11-14, 16, 17, 20-33, 35, 68-71, 73 and 74, made under 35 USC 102, as described in the *Claims Rejections – 35 USC*

102 section of the previous office action (dated 3/22/2007) is withdrawn in view of the amended claims.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

"The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention."

8. Claims 76-80 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

9. **Regarding claim 76**, the amendment filed 9/24/2007 adds the following limitations: "*visual blocks are specified*" (first limitation) and "*separators are specified*" (second limitation). The examiner has reviewed the originally filed specification, and has failed to find support for the added limitations. Applicant is required to cancel the new matter in response to this office action.

10. **Regarding claim 77**, the claim is rejected for the fully incorporating the deficiencies of claim 76, and the amendment filed 9/24/2007 adds the following limitation: "*the separator specification comprises a specification of a display area*".

The examiner has reviewed the originally filed specification, and has failed to find support for the added limitations. Applicant is required to cancel the new matter in response to this office action.

11. **Regarding claim 78**, the claim is rejected for the fully incorporating the deficiencies of claims 76 and 77, and the amendment filed 9/24/2007 adds the following limitation: "*the specification of the display area comprises a specification of a start pixel and a specification of an end pixel*". The examiner has reviewed the originally filed specification, and has failed to find support for the added limitations. Applicant is required to cancel the new matter in response to this office action.
12. **Regarding claims 79 and 80**, the amendment filed 9/24/2007 adds the following limitation: "*initializing a specification of an initial separator*". The examiner has reviewed the originally filed specification, and has failed to find support for the added limitations. Applicant is required to cancel the new matter in response to this office action.
13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

"The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."
14. Claims 68-71 and 73-75 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are the system components prescribed in the preamble of independent claims 68 and 74. The

limitations of independent claims 68 and 74 are directed to logical components embodied on computer readable media (i.e. a visual block extractor, a visual separator detector, a content structure constructor (claim 68) or means for identifying, means for detecting, and means for constructing (claim 74)). However, these logical components fail to include the basic components necessary to describe a computer implemented system for vision based document segmentation. Dependent claims 69-71 and 73-74 fail to remedy the deficiencies of the base claims.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1, 3-5, 7-9, 11-14, 16, 17, 20-33, 35, 68-71 and 73-80 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang et al. "HTML Page Analysis Based on Visual Cues" from the 6th International Conference on Document Analysis and Recognition (ICDAR 2001), Seattle, Washington, USA, Copyright 2001 (hereinafter

Yang) in view of Ma et al., US Patent Publication 2004/0013302, filed 11/13/2002, published 1/22/2004 (hereinafter Ma).

17. **Regarding independent claim 1**, Yang discloses identifying a plurality of visual blocks in a document and detecting, distinct from the plurality of visual blocks, one or more separators of the document based on, at least, one or more characteristics of at least one of the plurality of visual blocks. Yang recites: *"records in one category are normally organized in ways having a consistent visual layout style. Boundaries between different categories are marked apparently with different visual styles or separators. As we have said, the basic idea of our approach is to detect these visual cues"* (page 2, left column, third paragraph).

Yang discloses constructing a content structure for the document. Yang recites: *"in section 3 we introduce our heuristics. After that, we talk about our method to detect visual patterns and then to construct document structures based on these heuristics"* (page 2, left column, second paragraph). Yang discloses the content structure identifying, for the different visual blocks, different portions of semantic content. Yang recites: *"In this paper, we propose a novel method to extract semantic structures from general HTML pages. This method doesn't require a priori knowledge of web pages. It uses features derived directly from layout of HTML pages"* (page 1, last paragraph to page 2, first paragraph).

Yang's identifying step uses visual cues, and fails to disclose identifying based on a document model of the document. Ma teaches the use of a document model to identify blocks of a document. Ma recites: *"The segmentation and, optionally, OCR*

results 18 are matched to one or more document models in the classification and labeling process performed by matching module 20" (paragraph 21). Therefore, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made to identify document segments by using a document model in order "to generate an identified, segmented document" (Ma, paragraph 9).

18. **Regarding dependent claim 3,** Yang discloses a document described by a tree structure having a plurality of nodes. Yang's process is directed toward HTML documents. HTML documents are inherently processed by computers in a well-known process commonly referred to as parsing. Yang discloses parsing. Yang recites: *"the process to parse HTML documents and extract simple objects"* (page 2, right column, last paragraph). Parsing is a process where elements of a markup language document are placed into a tree structure in a relative way (i.e. there is a first or root element, with subsequent elements being related to the first as child, and where child elements can further have children). These elements are commonly referred to as nodes. Yang discloses identifying a group of candidate nodes, and for each node in the group: determining whether the node can be divided, and if the node cannot be divided, identifying the node as a visual block. Yang recites: *"During the process to parse HTML documents and to extract simple objects"* (page 2, right column, last paragraph), where Yang describes the simple object as *"None-breakable visual HTML objects"* (page 2, left column, last paragraph).

19. **Regarding dependent claim 4**, Yang discloses setting a degree of coherence for the visual block. The specification defines the degree of coherence as “*a measure of how coherent the visual block is*” (page 15, lines 13-14). Yang recites: “*A modifier equals to zero means that two objects are distinct or can’t be compared*” (page 2, right column, last paragraph).
20. **Regarding claims 5, 7-9, and 11-13**, Yang discloses dividing nodes into their respective child nodes based on criteria related to tags and node properties (including colors and sizes) on page 2, the bottom of the left column to the bottom of the right column.
21. **Regarding claims 14, 16, 17, and 20-30**, Yang discloses detecting the one or more separators. Yang recites: “*Boundaries between different categories are marked apparently with different visual styles or separators. As we have said, the basic idea of our approach is to detect these visual cues*” (page 2, left column, third paragraph). See also Figure 3a on page 6, where multiple visual blocks are identified where the separators between the blocks are both horizontal and vertical in nature.
22. **Regarding independent claims 31, 68 and 74**, the claims are directed toward a computer-readable media or a system, for the method of claim 1, and are rejected using the same rationale.

23. **Regarding claims 32, 70 and 75**, the claims are directed toward a computer readable media or a system, for the method of claim 3, and are rejected using the same rationale.
24. **Regarding claims 33 and 71**, the claims are directed toward a computer readable media or a system, for the method of claim 14, and are rejected using the same rationale.
25. **Regarding claims 35 and 73**, the claims are directed toward a computer readable media or a system, for the method of claims 4 and 26 combined, and are rejected using the same rationale.
26. **Regarding claim 69**, Yang discloses a document retrieval module that retrieves documents from a plurality of documents based at least in part on the content structure constructed for one or more of the plurality of documents. Yang discloses the "World Wide Web" with documents encoded as "*markup languages like HTML intending for visual browsers*" (page 1, first paragraph of the *Introduction* section). A browser is well known for retrieving documents (web pages) from a plurality of documents (the World Wide Web), based on the content structure (the markup language).
27. **Regarding claim 76-78**, Yang discloses visual analysis of documents where the boundaries and other document objects are visual cues to the document semantics. Ma teaches the use of document models in the visual analysis of documents, as described above. Ma discloses a document model where the visual blocks are

specified in Figure 2, at reference sign 26A. Yang discloses a specification for a display area in Figure 3A. The specification for the display area would inherently include a specification to a start and an end pixel.

28. **Regarding claims 79-80**, Yang discloses initializing a specification of an initial separator to include a display area that would be occupied by the entire document if it were displayed and initializing a specification of an initial separator to include a display area that would contain each of the plurality of visual blocks if they were displayed in Figure 3a and 3b, where Figure 3a shows the entire document being displayed in the display area, and Figure 3b shows each of the visual blocks displayed in the display area.

Response to Arguments

29. Applicant's arguments, filed 9/24/2007, with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection, as described above.
30. Furthermore, applicant argues that "*the nature and use of separators as required by claim 1 are not described in Yang*" (page 19, first paragraph of the response dated 9/24/2007). Yang is directed toward analyzing HTML pages based on visual cues to detect a semantic structure of the HTML document (abstract). Yang's analysis uses the visual similarity of HTML objects, and provides figures 2 and 3 as examples of typical web pages (first paragraph of Section 2, on page 2). Yang's

analysis includes the fundamental step of detecting boundaries between objects, where the boundaries between objects are "*marked apparently with different visual styles or separators*" (first paragraph of Section 2, on page 2). Yang's approach is a bottom up approach where the simplest visual objects are considered before complex visual objects (section 2 on pages 2 and 3). Yang detects the separation of visual blocks based on the characteristics of the visual blocks, by looking at the parameters of the visual blocks including such attributes as text font face, style, size and color (first paragraph of section 2.1).

Conclusion

31. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory J. Vaughn whose telephone number is (571) 272-4131. The examiner can normally be reached Monday to Friday from 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen S. Hong can be reached at (571) 272-4124. The fax phone number for the organization where this application or proceeding is assigned is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory J. Vaughn
Patent Examiner
November 30, 2007



STEPHEN HONG
SUPERVISORY PATENT EXAMINER